

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/036036 A1

(51) International Patent Classification⁷: **F02P 5/15**

(21) International Application Number:
PCT/JP2003/012837

(22) International Filing Date: 7 October 2003 (07.10.2003)

4-1, Chuo 1-chome, Wako-shi, Saitama 351-0193 (JP). YASUI, Yuji [JP/JP]; c/o Kabushiki Kaisha Honda Gijutsu Kenkyusho, 4-1, Chuo 1-chome, Wako-shi, Saitama 351-0193 (JP).

(25) Filing Language: English

(74) Agents: OKADA, Tsuguo et al.; OKADA & FUSHIMI, NE Kudan Bldg. 5F, 2-7, Kudan-minami 3-chome, Chiyoda-ku, Tokyo 102-0074 (JP).

(26) Publication Language: English

(81) Designated States (*national*): CN, US.

(30) Priority Data:
2002-305608 21 October 2002 (21.10.2002) JP

(84) Designated States (*regional*): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(71) Applicant (*for all designated States except US*): **HONDA MOTOR CO., LTD.** [JP/JP]; 1-1, Minami-Aoyama 2-chome, Minato-ku, Tokyo 107-8556 (JP).

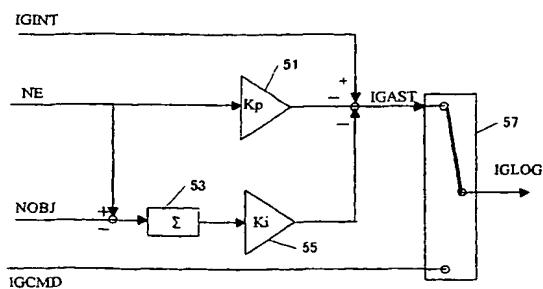
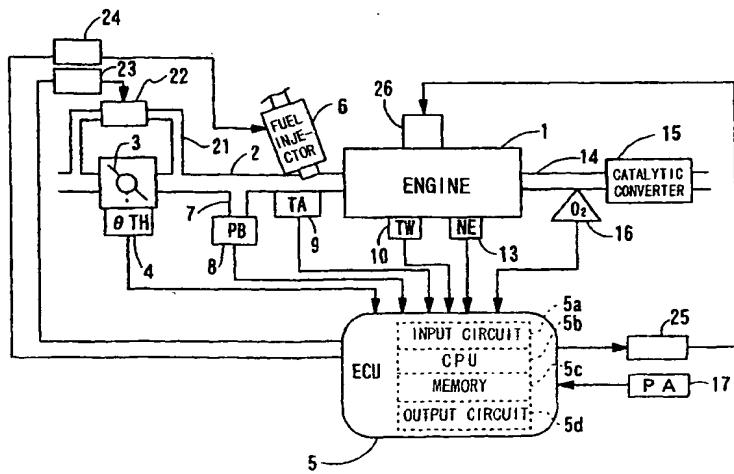
Published:

— with international search report

(72) Inventors; and
(75) Inventors/Applicants (*for US only*): **ISHIKAWA, Yosuke** [JP/JP]; c/o Kabushiki Kaisha Honda Gijutsu Kenkyusho,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ELECTRONIC CONTROL UNIT AND METHOD FOR CONTROLLING AN IGNITION TIMING OF AN INTERNAL-COMBUSTION ENGINE



(57) **Abstract:** An ignition timing value of the internal-combustion engine is calculated by using correction terms including a first correction term that is calculated based on a controlled variable without reflecting a desired value and a second correction term that is calculated based on a difference between the controlled variable and the desired value. The first correction term can be calculated based on the controlled variable with no influence of the desired value. Thus, a sudden change does not occur in the feedback controlled variable even in a situation where the difference between the controlled variable and the desired value changes step-wise. Besides, the first correction term is a proportional term (51) and the second correction term is an integral term (55). The controlled variable is a rotational speed of the internal-combustion engine (NE) that is detected by a detector for detecting the engine rotational speed.

BEST AVAILABLE COPY

WO 2004/036036 A1